APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,036	06/18/2001	Baldine-Brunel Paul	2685/5737	1365

			EXAMINER
26652	7590	04/05/2006	HUYNH, SON P

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ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>03</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>04 January 2006</u>.

2a)☐ This action is **FINAL.**   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-8 and 24-41</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-8 and 24-41</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>18 June 2001</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date <u>01/04/06</u>.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 1-8, 24-42 have been considered

but are moot in view of the new ground(s) of rejection.

2.   The indicated allowability of claims 24-26 is withdrawn in view of the newly

discovered reference(s) to Masaki et al. (US 6,356,309). Rejections based on the newly

cited reference(s) follow.

Claims 9-23 have been canceled.

Claim Rejections - 35 USC § 112

3.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

4.   Claims 3-6, 29-32, 37-40 are rejected under 35 U.S.C. 112, second paragraph,

as being indefinite for failing to particularly point out and distinctly claim the subject

matter which applicant regards as the invention.

In claims 3, 29, 37, line 3, the phrase "a frame of video data" is unclear. Accordingly,

data/video data comprises of bits having value of 0 and 1. It is unclear how bit value is a

frame. Appropriate correction is required.

Claims 6, 32, 40 recite the limitation "the encoded video frame" in lines 6,8. There is

insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1-7, 24-33, 35-41 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Masaki et al. (US 6,356,309) and in view of Li (US 6,275,531).

Regarding claim 1, Masaki discloses a method of transmitting information comprising:

encoding a plurality of frames (encoding plurality of frames from video input by

video coding device – see including, but are not limited to, figures 4, 7, col. 59, line 53-

col. 60, line 23; col. 62, lines 8-35, col. 82, lines 40-60);

receiving information about loss of frames by a network (receiving information such as error signal due to loss/drop of frames by the network –see including, but are not limited to, figures 4, 7, col. 62, line 67-col. 63, line 38; col. 64, lines 50-55; col. 66, lines 35-47);

if more than a threshold amount of the frames are being loss (transmit error signal if the error rate is larger than a predetermined threshold see including, but are not limited to, col. 67, line 10-col. 68, line 59; col. 82, line 40-col. 83, line 45, figures 4, 7, 16, 21), encoding an additional number of the frames, wherein the additional frames are encoded at a lower quality than is generally used for the frames (in response to receiving the error signal, the encoding unit receives additional of frames to be encoded, divides the video frame to be encoded in priority area in which the object will be displayed and a non-priority area in which a background will be displayed with a new function provided for setting the quantization step size for each area such as setting the quantization step size larger. Furthermore, in error mode, for the non-priority area, the coding device may be controlled not to perform coding operation and transmitting operation –see including, but is not limited to, col. 68, lines 12-59; col. 82, line 40-col. 83, line 45. Thus, the frames to be encoded are encoded as a lower quality than is generally used for the frames to be encoded (e.g. encoded only priority area which the object will be displayed, or reduce size of the priority objects instead of priority area (for object) and non priority area (for background), or full size of the object).

Masaki does not specifically disclose encoding the frames as either high priority frames
or low priority frames, loss frames are low priority frame, and the additional frames to be
encoded are encoded as high priority frames. However, Li, in an analogous art,
discloses encoding a plurality of frames as either high priority frames (e.g. base layers)
or low priority frames (e.g. enhancement layers) – see figure 1; loss of/dropping low
priority frames and encoding additional frames as high priority frames (the number of
enhancement layers are determined or limited by the network that provides the
transmission channel to the destination point. While the base layer bitstream is always
transmitted to the destination point, omitting one or more enhancement layers due to a
multitude of reasons such as the bandwidth of the channel, the destination device itself
– see col. 3, lines 17-58). Therefore, it would have been obvious to one of ordinary skill
in the art at the time the invention was made to modify Masaki to use the teaching as
taught by Li in order to improve efficiency such as minimizing the effect of loss of
frames/error to the pictures of video (i.e., the pictures still display but in lower quality
due to the loss of one or more enhancement layer).

Regarding claim 2, Masaki in view of Li teaches a method as discussed in claim 1.
Masaki further discloses the coding device monitors the error signal/notice from
receiving device based on error rate and switching between error mode and error free
mode in response to the error signal (col. 67, lines 67-67). Inherently, the feedback
(error signal/notice) is received from the network which comprises a response to a

request for information on whether the network currently has available capacity to
transmit additional high priority traffic.

Regarding claim 3, Masaki in view of Li teaches a method as discussed in claim 1. Li
further discloses

    receiving a frame of video data to be encoded (receiving frame of video data
from original video input 20 – figure 1);

    encoding and transmitting the frame as a high priority video coded frame (i.e.
base layer, enhancement layer 1, etc.) if permission was granted to send high priority
data (i.e. possible bandwidth, or no congestion, or other physical constraints (figure 1,
col. 3, lines 30-58, col. 5, line 57-col. 6, line 15). Li further discloses negotiation with the
network to determine condition of network to send base layer and high priority
enhancement layer (col. 5, line 48-col. 6, line 7). Inherently, the encoding layers request
permission and receiving response to the request to send data (as high priority data i.e.,
for sending base layer) over network.

Regarding claim 4, Masaki in view of Li teaches a method as discussed in claim 1. Li
further discloses encoding and transmitting the frame as a low priority frame if
permission was not granted to send high priority data (i.e. encoding the frame as
enhancement layer N, which can be dropped if there is no bandwidth available – col. 3,
lines 16-27; col. 5, lines 40-67).

Regarding claim 5, Masaki in view of Li teaches a method as discussed in claim 1. Li

further discloses deleting (dropping/omitting) the video coded frame from transmission if

permission was not granted to send high priority data (col. 3, lines 16-27, col. 5, lines

40-67).

Regarding claim 6, Masaki in view of Li discloses a method as discussed in the rejection

of claim 1. Masaki further discloses buffering the video frame at substantially the same

time as requesting permission to transmit data (buffering the video frames in temporary

buffer, transmission buffer, or retransmission buffer at substantially the same time as

requesting permission to transmit the data– see including, but is not limited to figure 4).

Li further discloses requesting permission to send high priority data (negotiation

with the network to send base layer and high priority enhancement layer – col. 5, lines

47-67);

encoding a high priority video frame at substantially the same time as the

requesting permission to transmit high priority data (encoding a video layer

substantially the same time as the negotiation with the network and intermediated

device to determine the number of N of bitstreams layer to be generated and layers to

be transmitted – col. 5, lines 47-67); and

transmitting the frame as a high priority video coded frame (i.e. base layer,

enhancement layer 1, etc.) if permission was granted to send high priority data (i.e.

possible bandwidth, or no congestion, or other physical constraints (figure 1, col. 3, lines

30-58, col. 5, line 57-col. 6, line 15); and

deleting (dropping/omitting) the video coded frame from transmission if permission was

not granted to send high priority data (col. 3, lines 16-27, col. 5, lines 40-67). Therefore,

it would have been obvious to one of ordinary skill in the art at the time the invention

was made to modify Masaki to use the teaching as further taught by Li in order to

improve efficiency in data transmission.

Regarding claim 7, Masaki in view of Li teaches a method as discussed in claim 1. Li

further discloses encoding as high priority frames all video frames that are to be

transmitted (encoding original video as frames of N bitstream layers that are to be

transmitted – figure 1);

for each of the coded frames:

determining permission to send high priority data (determining condition of transmission

channel to send the frame – col. 5, line 40-col. 6, line 7);

transmitting the frame as a high priority frame if permission to transmit high priority data

was granted (e.g., transmitting the frame if predetermined bandwidth of transmission

channel is available – col. 5, line 40-col. 6, line 7); and

transmitting the fame as a low priority frame if permission to transmit high priority data

was not granted (for example, transmitting frames in N-M bitstream layers as low priority

(the bitstream layer can be dropped/omitted) if there is not enough available bandwidth

– col. 3, lines 17-42; col. 5, line 47-col. 6, line 7). Li further discloses the encoder layers

in negotiation with the network and intermediate devices determine the number of the

bitstream layers to be generated (col. 5, lines 47-55). Inherently, encoder layers request permission to send data.

Regarding claim 24, the limitations that correspond to the limitations of claim 1 are analyzed as discussed with respect to the rejection of claim 1. Li further discloses the encoder layers in negotiation with the network and intermediate devices determine the number N of bitstream layers to be generated (col. 5, lines 47-67). Inherently, information from the network on how much bandwidth is allocated to the encoder for high priority frames is received (e.g., receiving information of bandwidth of transmission channel, network, intermediate device, destination device capabilities, etc. for number of frames, including high priority frames -col. 3, lines 17-67).

Regarding claim 25, Masaki in view of Li discloses a method as discussed in the rejection of claim 24. Masaki further discloses information about loss of frame by the network is received as network feedback (i.e. error signal/notice/retransmission request from receiving device – see including, but is not limited to, col. 67, lines 10-52).

Regarding claim 26, Masaki in view of Li discloses a method as discussed in the rejection of claim 24. Masaki further discloses the monitor the error signal/notice from the network and switch the mode in response to the error signal/notice received. For example, if the transmission control portion did not receive the error signal from the video receiving device over a predetermined time, the coding device will switch from

error mode to error free mode (col. 67, lines 10-53). It is obvious that the information

about loss of frames by the network is received using Real Time Control Protocol to fix

the error immediately, thereby improve efficiency in data transmission and quality of

services.

Regarding claims 27-33, the limitations as claimed are directed toward embodying the

method of claims 1-7 in "computer readable medium". It would have been obvious to

embody the procedures of Masaki in view of Li as discussed with respect to claims 1-7

in a "computer readable medium" in order that the instructions could be automatically

performed by a processor.

Regarding claims 34-41, the limitations of the computing device as claimed correspond

to the limitations of the method as claims in claims 1-7, and are analyzed as discussed

with respect to the rejection of claims 1-7.

7.   Claims 8, 34 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Masaki et al. (US 6,356,309) in view of Li (US 6,275,531) as applied to claim 7

above, and further in view of Zhang et al. (US 6,816,194).

Regarding claim 8, Masaki in view of Li teaches a method as discussed in the rejection

of claim 7. Li further discloses base layer bitstream is guaranteed (col. 5, line 47-55).

However, neither Masaki nor Li specifically discloses high priority frames are

transmitted over the network separately than the low priority frames, wherein the high priority frames are transmitted over the network using a guaranteed quality of service trunk, and wherein the low priority frames are transmitted over the network on a best effort truck.

Zhang discloses high priority frames (e.g. base layers) are transmitted over the network separately than the low priority frames (col. 3, lines 37-43; col. 7, line 57-col. 8, line 6), wherein the high priority frames are transmitted over the network using a guaranteed quality of service trunk (e.g. well controlled channel – col. 3, lines 1-12; col. 7, lines 56-63), and wherein the low priority frames are transmitted over the network on a best effort truck (bitstream where the layer can be dropped – col. 3, lines 27-53; col. 10, lines 1-9). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Masaki in view of Li to use the teaching as taught by Zhang in order to avoid the lost of frame for base layer if the packet loss or error occurs in the low priority frame (enhancement layer) – see col. 3, lines 33-43).

Regarding claims 34 and 42, the additional limitations of the computer-readable medium and computing device, respectively, as claimed correspond to the limitations as claimed in claim 8, and are analyzed as discussed with respect to the rejection of claim 8.

Conclusion

8.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wu et al. (US 6,614,936) discloses system and method for robust video coding using progressive fine granularity scalable coding.

Hunt et al. (US 5,764,235) discloses computer implemented method and system for transmitting graphical images from server to client at user selectable resolution.

9.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Son P. Huynh whose telephone number is 571-272-7295. The examiner can normally be reached on 9:00 - 6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher S. Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

It is noted that Group Art Unit 2611 has been changed to Group Art Unit

2623

SPH

March 30, 2006

HAI TRAN
PRIMARY EXAMINER